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(71)Applicant : **NEC CORP**

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(72)Inventor : **KAMIYAMA SATOSHI**

(54) MANUFACTURE OF CAPACITOR INSULATING FILM

(57)Abstract:

PURPOSE: To prevent the surface of a wafer from being contaminated by dust or particles by a method wherein a process that a tantalum oxide capacitor insulating film is formed and another process that a conductive barrier film is formed are successively executed in the same chamber.

CONSTITUTION: A tantalum nitride film serving as a barrier film is formed through a plasma chemical reaction method using a tantalum chloride gas and ammonia gas, and a tantalum oxide film serving as a capacitor insulating film of high dielectric constant is formed in succession through a plasma chemical reaction method in the same chamber using tantalum chloride gas and nitrogen dioxide gas to form a multilayered film serving as a capacitor insulating film composed of a high dielectric constant capacitor insulating film and a barrier film. As mentioned above, a capacitor insulating film is formed in the same chamber, so that the surface of the capacitor insulating film is protected against contamination by dust or particles produced in the formation of a film of multilayered structure in a conventional forming method.

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